DOCUMENT RESUME

ED 450 257 CE 081 409

AUTHOR	Campbell, Mike; Chapman, Rachael; Hutchinson, Jo
TITLE	Spatial Skill Variations: Their Extent and Implications. Skills Task Force Research Paper 14.
INSTITUTION	Department for Education and Employment, London (England).
PUB DATE	1999-00-00
NOTE	32p.
AVAILABLE FROM	DfEE Publications, P.O. Box 5050, Sudbury, Suffolk CO10 6YJ, United Kingdom (reference SKT19). Tel: 0845 60 222 60; Fax: 0845 60 333 60; Web site: http://www.dfee.gov.uk/skillsforce. (SKT19).
PUB TYPE	Reports - Evaluative (142)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Adult Education; Articulation (Education); Developed Nations; Differences; *Economic Impact; Economic Progress; Education Work Relationship; *Employment Qualifications; Foreign Countries; Geographic Location; *Geographic Regions; *Job Skills; *Labor Force; Outcomes of Education; *Regional Characteristics; Salary Wage Differentials
IDENTIFIERS	*England

ABSTRACT

This paper examines the extent, nature, and implications of spatial variations in skill levels across England. Section 2 sets out reasons why skill levels should be important to localities and their economic potential by outlining their growing importance and the way in which they are connected to economic well-being. Section 3 sets out the extent and nature of spatial skill variations in England, considering different measures of the qualifications (used as a proxy for skills) of the labor force and the qualifications of young people at school. Section 4 examines the relationship at a local level between the skill levels of the work force and those of the school population to consider the possibility of a systemic skills condition across localities. Section 5 sets out to assess the relationship between the spatial skill variations found and various indicators of local economic performance--employment, competitiveness, earnings, and deprivation. Section 6 sets out the main implications of the findings. (Contains 24 references.) (YLB)

Reproductions supplied by EDRS are the best that can be made
from the original document.

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED 450 257

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
J. Birch
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
1

14

Spatial Skill Variations: their extent and implications

BEST COPY AVAILABLE

Skills Task Force
Research Paper 14

Spatial Skill Variations:
Their Extent and Implications

Professor Mike Campbell
Rachael Chapman
Jo Hutchinson

Policy Research Institute
Leeds Metropolitan University
Bronte Hall
Beckett Park Campus
Leeds LS6 3QS
Tel: 0113 283 1747
Fax: 0113 283 1748
Email : m.campbell@lmu.ac.uk
Website: www.lmu.ac.uk/lbs/pri

Skills Task Force Research Group

Foreword

The Secretary of State for Education and Employment established the Skills Task Force to assist him in developing a National Skills Agenda. The Task Force has been asked to provide advice on the nature, extent and pattern of skill needs and shortages (together with associated recruitment difficulties), how these are likely to change in the future and what can be done to ease such problems. The Task Force is due to present its final report in Spring 2000.

The Task Force has taken several initiatives to provide evidence which can inform its deliberations on these issues. This has included commissioning a substantial programme of new research, holding consultation events, inviting presentations to the Task Force and setting up an academic group comprising leading academics and researchers in the field of labour market studies. Members of this group were commissioned to produce papers which review and evaluate the existing literature in a number of skills-related areas. The papers were peer-reviewed by the whole group before being considered by members of the Task Force, and others, at appropriate events.

This paper is one of the series which have been commissioned. The Task Force welcomes the paper as a useful contribution to the evidence which it has been possible to consider and is pleased to publish it as part of its overall commitment to making evidence widely available.

However, it should be noted that the views expressed and any recommendations made within the paper are those of the individual authors only. Publication does not necessarily mean that either the Skills Task Force or DfEE endorse the views expressed.

Contents

1. INTRODUCTION 1

2. 2 WHY ARE SKILLS IMPORTANT TO LOCALITIES? 2

3. THE EXTENT AND NATURE OF SPATIAL SKILL VARIATIONS 5

3.1 The Workforce as a Whole 6

3.2 Young People at School 8

3.3 Concluding Remarks 8

4. 4 SYSTEMATIC SKILL VARIATIONS 10

5. SKILLS AND LOCAL ECONOMIC PERFORMANCE 15

5.1 Skills and Jobs 15

5.2 Skills and Competitiveness 16

5.3 Skills and Living Standards 17

5.4 Skills and Deprivation 18

6. THE IMPLICATIONS OF SPATIAL SKILLS VARIATIONS 21

1. Introduction

This paper seeks to examine the extent, nature and implications of spatial variations in skill levels across England. The vast bulk of research on skills is focused at the national level, yet the existence of spatial variations in skill levels could have profound implications for policy in at least four ways. First, such variations would restrict the development of an effective national skills agenda as without action to tackle the problems of low skill localities, national progress will be obstructed. Second, the low skill localities will themselves be excluded from any emergent high skill society with all that this implies. Third, if spatial skill variations are also associated with variations in local economic performance, then their existence will also hamper national economic performance. Finally the existence of such a relationship will also restrict the development and potential of localities themselves, and thus the economic and social opportunities for the people who live in them.

Under these conditions a national skills strategy will require an explicit and coherent spatial component with local action tied to local needs, and with resource deployment and agency configuration similarly deployed to raise skill levels in the skill poor localities up towards those that exist in the skill rich localities. A spatial skills strategy thus becomes a crucial component of a wider local and regional economic development strategy as well as of a national skills strategy.

Despite the importance of such spatial skill variations, almost no systematic work has been undertaken to identify the extent and nature of skill variations nor to examine their relationship to local economic performance. This paper seeks to do so.

The paper firstly, in Section 2, sets out the reasons why skill levels should be important to localities and their economic potential by outlining their growing importance and the way in which they are connected to economic wellbeing. In Section 3, we set out the extent and nature of spatial skill variations in England, considering different measures of the qualifications (used as a proxy for skills) of the labour force as well as the qualifications of young people at school

Section 4 examines the relationship at a local level between the skill levels of the workforce and those of the school population, to consider the possibility of a systemic skills condition across localities.

Section 5 sets out to assess the relationship between the spatial skill variations we have found and various indicators of local economic performance – employment, competitiveness, earnings and deprivation.

Finally, in Section 6, we set out the main implications of our findings.

2. Why Are Skills Important to Localities?

Skills can contribute to economic success at the level of the organisation and of the individual. Skills acquisition can improve organisational performance through increasing productivity; increasing employee commitment; enhancing adaptability to organisational and technological change; encouraging process and product development; improving relations with suppliers and customers; improving quality; and, stimulating moves to high value added goods and services. In short, it can have a powerful effect, on organisational performance in terms of growth and profitability. There is indeed extensive international evidence that skills are central to corporate performance (OECD 1998a, Barrett et al 1998), though a cautious note is sounded by Green (1997).

At the level of the individual increased skill levels can reduce labour market exclusion and unemployment by increasing individual's employability, adaptability and access to evolving job opportunities. It can also improve the future job prospects and earnings potential of those already in employment. For example there are substantial variations in unemployment rates across different qualifications levels, particularly amongst young people, and substantial variations in earnings levels by qualifications level. These amount, at midcycle for example, to £40 per week between those without qualifications and those qualified to NVQ2 and to a 50% reduction in unemployment rates for young people for each 'level' of NVQ (Campbell 1999a). These unemployment gaps and earnings premia associated with different qualification levels are, moreover, greater in the UK than in most OECD countries (OECD 1998a).

Thus, it is not surprising that in terms of national economic performance, a range of studies point to the value of skills and qualifications in enhancing competitiveness and economic growth (Barro 1991, Sturm 1993, Englander and Gurney 1994).

From the point of view of a locality, therefore, in so far as individuals' and organisations' skills levels are raised throughout a local economy, the effect should be to improve the competitive position of the area and thus increase economic growth and, all else being equal, stimulate employment, earnings and living standards.

Skill levels are, moreover, increasingly important to localities for at least five reasons:

- the process of globalisation is increasingly integrating local economies into the national and international economy. This increases competitive pressures, and opportunities, forces adaptation to changing market conditions and increases the importance of skills as a differentiating feature in competitive markets, especially if an area is moving up the 'value added' chain in order to compete effectively.

- the process of technological change and, in particular the integration of, and rapid and widespread use of, information and communication technologies, not only heightens competition through effectively 'collapsing' time and space,

but transforms competitive advantage, speeds up industrial change and changes the organisation of work.

- the combination of these two forces is increasing skill requirements as work organisation and technology become more complex and the pattern of employment shifts to more knowledge/information rich jobs. In particular the emergence of the 'weightless economy' (Coyle, 1999) where value is effectively dematerialising, means that people are increasingly purchasing human attributes rather than material products. The resulting changing pattern of employment means that most new jobs require higher skill levels than those which they replace.
- Changes in the pattern of consumer demand are driving up the 'relational' component of economic activity, thus expanding the need.
- skills acquisition is crucial precisely because the current skills base is relatively weak. The previous Government's skills audit, for example, demonstrates a range of skills deficiencies which combine to threaten long-run economic success, jobs and living standards.

Local economies must adapt their skills profiles to these changes in the economy and the labour market and recognise the importance of skills in economic success. But to what extent in 'reality' is the 'skill intensity' of the labour market increasing?

By 'superimposing' onto occupational forecasts of future jobs growth, the existing qualifications structure of employment in each occupation, we can obtain an estimate of the minimum likely skill intensity of future jobs growth.

Table 1 shows that 55% of all new jobs that are likely to be created in the next few years (444,000 out of 851,000) are likely to be at levels NVQ3 and above. Only 18% (155,000) are likely to require qualifications below level 2. If we compare this to the qualifications structure of the existing workforce (see the bottom line of Table 1) we can see that this represents a substantial increase in the demand for higher level skills, especially at NVQ4 and above, and a considerable reduction in the demand for skills at NVQ1 or below. The likely effect of these changes on unemployment rates and earnings will be to widen still further these differentials by qualification level, unless skill levels 'catch up' (Nickell and Layard 1998). Clearly, localities which seek to create employment opportunities will need to be 'skill intensive'.

In practice, these are likely to be minimum estimates of increasing skill requirements, as recent years have witnessed increasing actual skill level use (Felstead et al 1999, Green 1998, Ashton and Felstead 1998) and it is likely that the skill levels of new recruits will exceed the current 'averages' within the existing workforce.

This brief discussion of the importance of skills to localities leads us to conclude that we would expect spatial skill variations to be a crucial issue of public policy. If skills levels are indeed linked to individual, corporate and economic success, and if skill needs are increasing, then the existence of spatial skill variations will not only restrict the achievement of national economic and employment objectives, but will influence the capacity of particular local economies, their companies and inhabitants, to themselves succeed. In such circumstances spatial skill variations will contribute to,

and reinforce, an uneven pattern of economic development and labour market conditions.

The next section of this paper, therefore, sets out the evidence on the extent and nature of these skill variations. This is followed in sections 4 and 5, with evidence on the way spatial variations in skill levels are systemic and are indeed connected to various aspects of local economic performance.

Table 1: Projected Change in demand for qualifications in the UK, 1997-2005

Occupation		Change in demand for those qualified to				
	Employment change 1997-2005* ('000s)	NVQ4+ ('000s)	NVQ3 ('000s)	NVQ2 ('000s)	NVQ1 ('000s)	No qualifs. ('000s)
Corporate managers	215.4	91.3	54.5	40.7	19.4	9.7
Managers in agriculture and services	47.8	8.9	14.0	10.9	6.3	7.8
Science/Engineering professionals	44.6	32.1	8.1	2.3	1.6	0.6
Health Professionals	11.0	9.9	0.2	0.1	0.7	0.0
Teaching professionals	-3.6	-3.4	-0.1	-0.1	-0.1	0.0
Other professionals	91.5	71.5	9.9	6.3	3.4	0.5
Science/Engineering assoc. professionals	58.2	31.0	17.2	6.6	2.4	1.0
Health assoc. Professionals	7.0	6.0	0.4	0.3	0.2	0.0
Other assoc. Professionals	177.5	81.7	41.7	31.4	16.5	6.2
Clerical occupations	92.5	14.2	21.7	33.8	13.3	9.4
Secretarial occupations	3.2	0.3	0.7	1.4	0.6	0.2
Skilled construction trades	-11.4	-0.4	-6.0	-1.5	-1.4	-2.3
Skilled engineering trades	-128.7	-16.3	-77.0	-17.8	-9.7	-7.9
Other skilled trades	-100.1	-4.4	-48.5	-16.0	-14.3	-16.8
Protective service occups	45.2	6.0	15.4	12.4	7.9	3.5
Personal service occups	287.3	29.0	65.2	89.1	56.3	47.7
Buyers, brokers/sales reps	-6.2	-1.6	-1.7	-1.9	-0.6	-0.4
Other sales occups	119.3	8.8	23.6	44.5	19.1	23.3
Industrial plant/ machine operators	-91.8	-3.7	-20.9	-20.7	-20.7	-25.9
Drivers/mobile machine operators	-25.5	-0.8	-5.7	-4.5	-10.8	-3.7
Other farming occups	-19.7	-1.0	-3.7	-5.3	-4.7	-5.0
Other elementary occups	37.9	1.2	5.3	8.5	9.4	13.5
Total	851.4	360.3	114.3	220.5	94.8	61.4
% of New Jobs	100%	42%	13%	26%	11%	7%
% of current workforce qualified to each NVQ level	-	25.9%	24.7%	22.4%	14.4%	12.6%

Source: Policy Research Institute calculations based on Business Strategies Limited, 1998 and Labour Force Survey, 1998

*Some rows and columns do not total exactly because of rounding

BEST COPY AVAILABLE

3. The Extent and Nature of Spatial Skill Variations

Almost no systematic work has been undertaken to identify the extent and nature of skill variations across England, though two recent studies do draw attention to the issue. Payne (1997) draws attention to strong regional variations in full time education and training participation post 16. For example, participation rates in London for 16 year olds are one third higher than in the Northern region. These variations are shown to be particularly strong amongst those with average or below average GCSE results.

Recently the Social Exclusion Unit (1999) has also drawn attention to 17 year old participation rate variations in education and training at the level of local education authorities: 16 have a participation rate of less than 75% in education or training. They point out that "educational underachievement (of 16-18 year olds) which is strongly linked to later non participation, is disproportionately concentrated in poor neighborhoods: For example 20% of those individuals without any GCSE passes at any grade are to be found in just 203 schools – just 6% of total schools – and 58% of these schools are located within 2 miles of a large deprived social housing estate.

However, there has to date, been no systematic and comprehensive assessment of the extent of spatial skills variations across England as a whole and across a range of qualification levels.

So, what are the variations in skill levels across localities? In this section of the paper we outline the main variations that exist at a range of qualification levels. First, we identify the variations that exist between the qualification levels of the workforce as a whole across localities. We do so in relation to a number of indicators:

(a) the percentage of the workforce with no qualifications at all in 1997 – this is be examined at the level of all local authority districts in England, some 345 using the Labour Force Survey

(b) the proportion of the workforce with low or very low levels of numeracy in 1997 – this is also be examined at the level of all local authority districts, using data from the Basic Skills Agency (Basic Skills Agency 1998)

(c) The percentage of the workforce qualified to NVQ2, NVQ3, and NVQ4 and above or equivalent levels, in 1997. This is examined at the level of the 46 counties of England, because of sample size limitations in The Labour Force Survey.

(d) Second, we identify the main variations that exist across localities in the qualification levels of young people at school, both at age 11 (Key Stage 2) and 16 (GCSE). This data relates to 1998.

3.1 The Workforce as a Whole

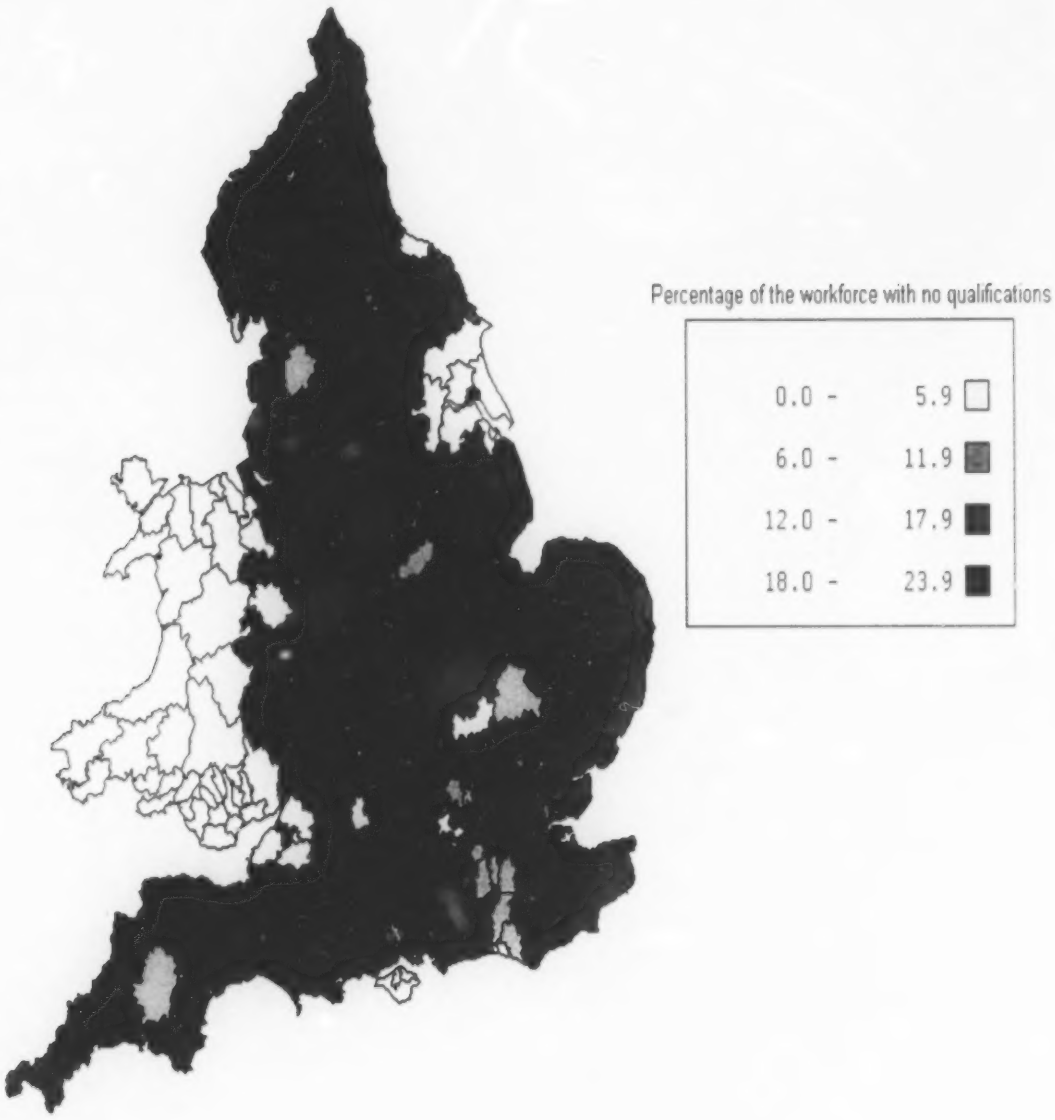
The proportion of the workforce that has no qualifications varies very significantly between different localities (See Figure 1). It varies from a high of 20% or more in Tower Hamlets, Easington and Walsall, to a low of 5% or less in, for example, West Devon, South Cambridgeshire and Reigate. 57 local authority districts have 15% of more of their workforce without any qualifications at all. More than 150 have 10% or less of their workforce without qualifications.

When we come to examine the relationship between skill variations and various aspects of local economic performance in Section 5 we are able to do so only at the level of 46 counties because of the limited local availability of economic performance indicators. Hence, we briefly here indicate here the nature of the skill variations at this higher level of geographical aggregation.

The proportion of the workforce without any qualifications varies from a low of 9% in Surrey to over 18% in the West Midlands. 7 counties have a workforce where more than 15% have no qualifications. In addition to the West Midlands these are Staffordshire, Nottinghamshire, Hereford/Worcester, Cleveland, Leicestershire and Derbyshire.

There are also substantial variations across localities in the proportion of the population aged 16-60 with low or very low, levels of numeracy. This varies from a high of 48% in Knowsley, to 24% in Richmond on Thames. 34 local authority districts have 40% or more of their populations with low/very low levels of numeracy. (BSA 1998)

Figure 1 **Percentage of the workforce with no qualifications (English local authority districts)**



Note: areas with no shading indicates data not available.

The proportion of the workforce which is qualified to NVQ2 or above varies from a high of 80% in Surrey and Buckinghamshire to a low of 64% in the West Midlands. Thus 20% of the workforce in Surrey are not qualified up to NVQ2 compared to 36% of the workforce in the West Midlands. Six counties have more than a third of their workforce who are not qualified upto level 2. In addition to the West Midlands, these are Cumbria, Humberside, Isle of Wight, Hereford and Worcester and Nottinghamshire.

The proportion of the workforce qualified to NVQ3 or above also varies significantly across the counties from a high of 35% in Oxfordshire to a low of 15% on the Isle of Wight.

12 counties have less than 20% of the workforce qualified to NVQ4 with the Isle of Wight, Cleveland and Humberside having the lowest proportions, whilst 5 have more than 30% - Oxfordshire, Surrey, London, Berkshire and Buckinghamshire

3.2 Young People at School

We can also examine spatial variations in the skills of young people as proxied by the proportion of who obtain Level 4 (average) at Key Stage 2 (age 11) and the proportion who achieve 5 GCSE passes A-C at age 16, at the level of the 100 local authority districts which have school educational responsibilities (ie. local education authorities).

The proportion obtaining Level 4 at Key Stage 2 varies from a high of 90% in the City of London to just 46% in Nottingham. In 25 districts, two-thirds or more children reach this level of attainment, however in 45 districts the proportion who so achieve is less than 60%.

At GCSE level there are also substantial variations. In 15 districts more than 50% of 16 year olds achieve 5 or more passes at A-C (including Kingston on Thames, Sutton and Wokingham) whilst in another 15 districts fewer than 30% do so (including Hull, Islington and Manchester).

3.3 Concluding Remarks

Overall then we can safely conclude that spatial variations in skill levels are indeed extensive. The difference in the proportion of the workforce which are 'unqualified' is up to 4 times greater in some areas than others; differences in numeracy levels mean that the proportions of the population with low or very low numeracy are up to double that in some areas than others; the proportion of the workforce who are not qualified up to Level 2 is up to nearly double in some areas than others; the differences in the proportion of labour force who are not qualified up to Level 3 are up to one and a half times in some areas than others; and the proportion who are qualified up to Level 4 is more than double in some areas, than others. With regard to attainment of qualifications at school, they vary at age 11 by a factor of up to 2 to 1, and at age 16 by a factor of over 2 to 1.

By any standards, then there are very substantial differences in skill levels across differing localities. However, this paper has not sought to examine the causes of these skill variations which is an important topic for future research. Such research

could examine this from the supply side – how far the differences reflect differences in gender, ethnicity and socio-economic composition of the localities, for example – or from the demand side, how far they reflect the labour market demand derived from local sectoral and occupational composition, for example.

4. Systematic Skill Variations

To what extent is it the case that those localities, which are 'skill weak', are skill weak at all 3 levels – at age 11, at age 16 and in the workforce as a whole? To what extent is it also the case that those localities, which are 'skill rich', are skill rich at all 3 levels? The existence of such systematic relations would imply the existence of structural weaknesses in local skill formation, development and retention in some areas and structural strengths in others. The links between these three elements are important because labour mobility means that skills 'formed' in one area may be further developed and retained in the area or may be 'lost' to other areas over time. Such systematic relations would imply that spatial skill variations are deeply structural and are thus likely to require sustained action if they are to be reduced.

Table 2 and Figures 2, 3, 4, 5 and 6 display the relationship between the 3 levels across, the 100 local authority districts (local education authorities) for which comparative data is available.

Table 2: Spatial Skill Variations: Relationships Across Levels of Qualification

	% key stage 2	% attaining 5 GCSE	% workforce with no qualifications	% working population low numeracy
% attaining Level 4 at Key Stage 2[1998]		.791**	.663**	.642**
% attaining 5 GCSE (A-C) [1998]	.791**		.598**	.686**
% workforce with no qualifications [1997]	.663**	.598**		.663**
% working population with low numeracy	.642**	.686**	.663**	

Note : ** Indicates significance at 0.01 level

BEST COPY AVAILABLE

Figure 2 **% with 5+ GCSE passes A to C by % Key Stage 2 Level 4**

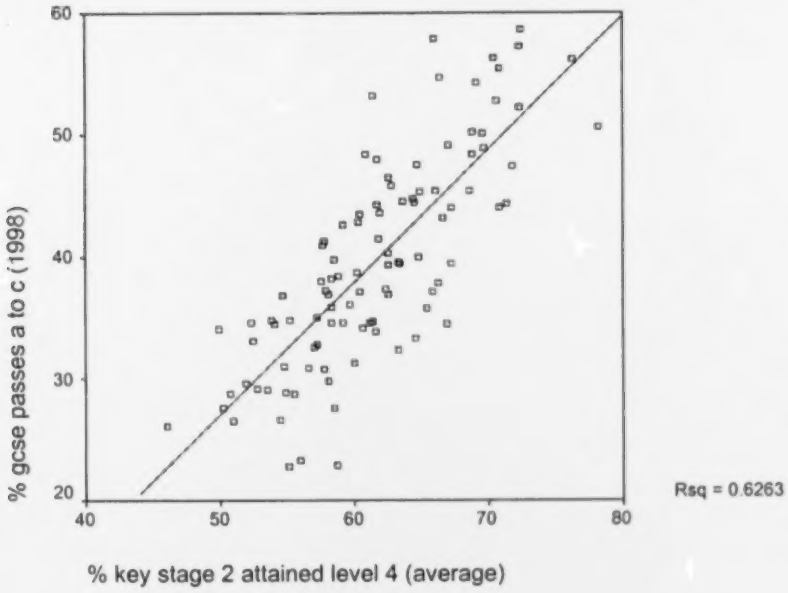


Figure 3 **% workforce with no qualifications by % at Key Stage 2 attaining level 4**

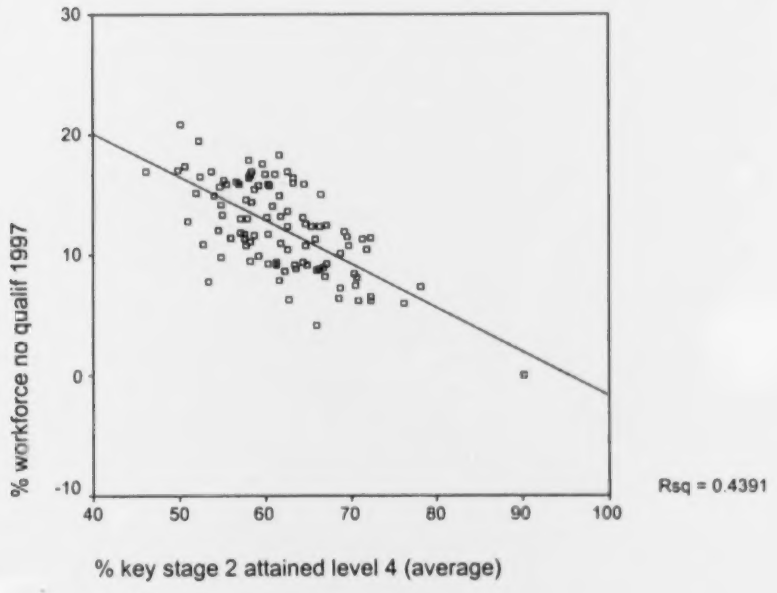


Figure 4 **% of workforce with no qualifications by % with 5+ GCSE passes A to C**

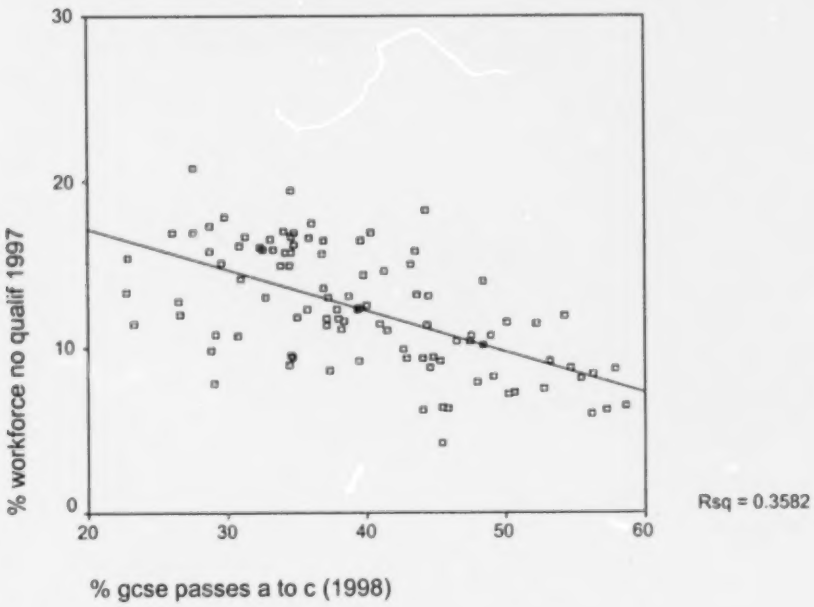


Figure 5 **% of population with vlow/low numeracy by % with 5+ GCSEs A to C**

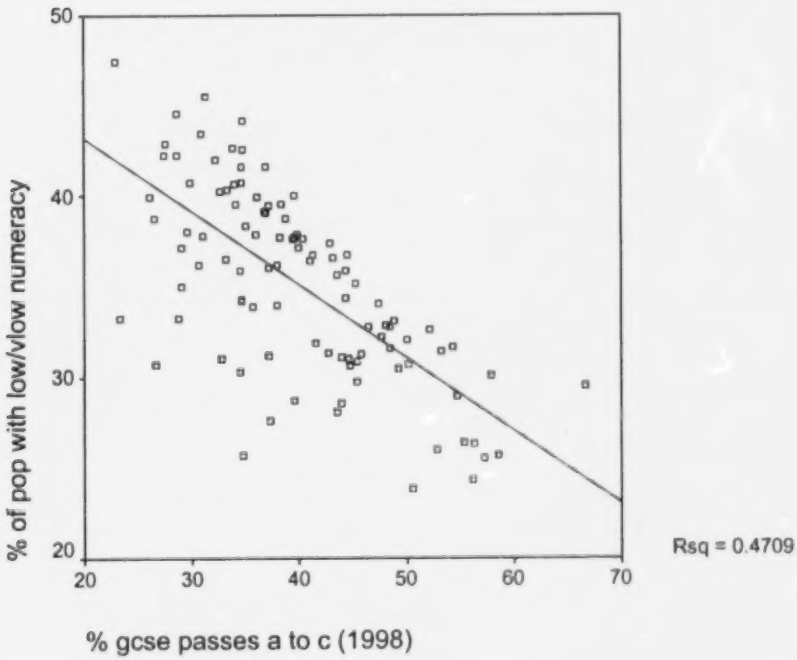
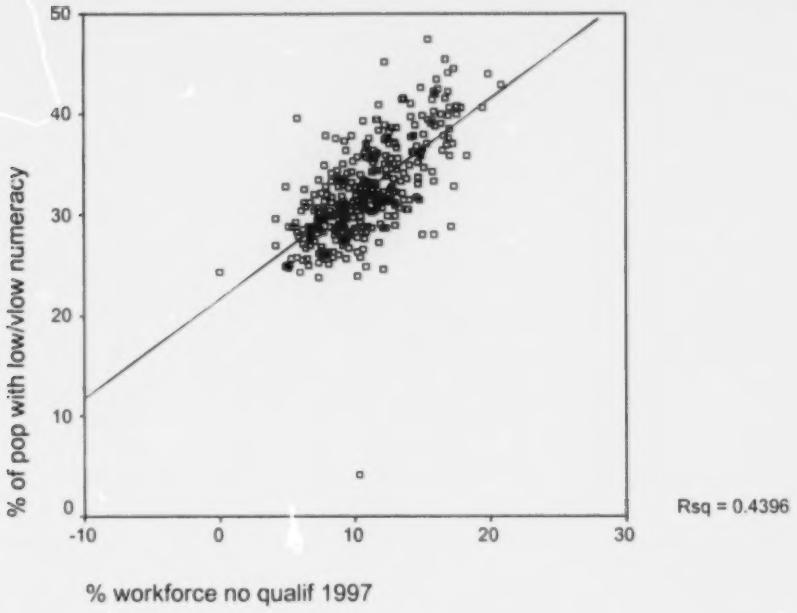


Figure 6 % of population with vlow/low numeracy by % workforce with no qualifications



Firstly, in respect of the relationship between attainment at key stage 2 and GCSE we can see from table 2 that the correlation coefficient is .791 and is statistically significant at the 0.01 level. Figure 2 displays the relevant scattergram and regression line (with an R^2 of .62). It is clear that localities which perform poorly at Key Stage 2 also do so at GCSE and that areas which perform well at Key Stage 2 also do so at GCSE.

Secondly, we can also see from table 2 that there is a close relationship between attainment at Key Stage 2 and the qualifications of the workforce (correlation coefficient of .663, which is again significant at the 0.01% level). Figure 3 shows the relationship (R^2 = .44). Again, it is clear that localities which perform poorly at Key Stage 2 also do so in terms of the qualification levels of the local workforce as a whole, as measured by the proportion who have no qualifications.

Thirdly, we can see that there is a close relationship between performance at GCSE and the qualifications of the workforce as a whole. There is a correlation coefficient of .60, which is significant at the 0.01% level. Figure 4 plots the relationship (R^2 = .36). Localities which perform poorly at GCSE also tend to have poorly qualified local workforces, and those that perform well at GCSE tend to have better qualified workforces.

Fourthly, there is also a close relationship between localities' performance at GCSE and the numeracy levels of the workforce as a whole (see Figure 5). The correlation coefficient (again significant at 0.01%) level is .663 and the R^2 = .47.

Finally, localities with poor workforce qualification levels also, not surprisingly, tend to have a workforce with low levels of numeracy. We can see from table 2 that the

correlation coefficient is .66 and is significant at the 0.01% level. Figure 6, shows the relationship.

It is clear from these results that there is a systematic tendency for localities to perform relatively well or relatively poorly in terms of skills across all 3 levels – at age 11, at age 16 and in terms of their workforces. This makes the case for the significance of the variations discussed in Section 3 all the more substantial. These results seem to run counter to the contrast in Scotland and Northern Ireland between levels of attainment in schools and participation in continuing participation in education post 16 (Schuller and Field 1998).

5. Skills and Local Economic Performance

In this section of the paper we seek to examine whether the above substantial and systematic spatial skill variations 'matter' in terms of local economic performance. Yet very little work has been undertaken on the links between skills and local economic performance. A rare exception is Bradley and Taylor (1995) who examine the link using 1991 data, for young people only, for 107 local education authorities, They show that favourable local labour market conditions, for example low unemployment, are associated with higher school leaver performance; that rapid local employment growth affects the staying on rate; that localities' endowment of skills and their level of investment in education and training are important factors in determining its employment growth over time; and finally that localities with a poor social and economic infrastructure and poor economic performance tend to be saddled with poor educational performance.

From our discussion in section 2, we could expect spatial skill variations to be associated with variations in local economic performance. Here, therefore, we seek to set out the connections between local skill levels and a range of indicators of local economic performance. In most cases the assessment is undertaken at the level of the 46 English counties, as it is at this level where the main indicators of both skills and economic performance are both most widely available.

First, (in section 5.1) we examine the link between local skills levels and jobs growth – to what extent is it the case that skill rich areas perform better than sill poor areas in generating employment growth? Second, (in section 5.2) we examine the link between local skill levels and competitiveness – to what extent is it the case that skill rich areas have higher levels of GDP per head than skill poor areas? Third, (in section 5.3) we examine the link between local skill levels and the incomes of the local population – to what extent is it the case that skill rich areas have higher average earning levels than skill poor areas. Finally, (in Section 5.4) we examine the relationship between local skill levels and deprivation – to what extent is it the case that skill poor areas are also the most deprived localities in the country?

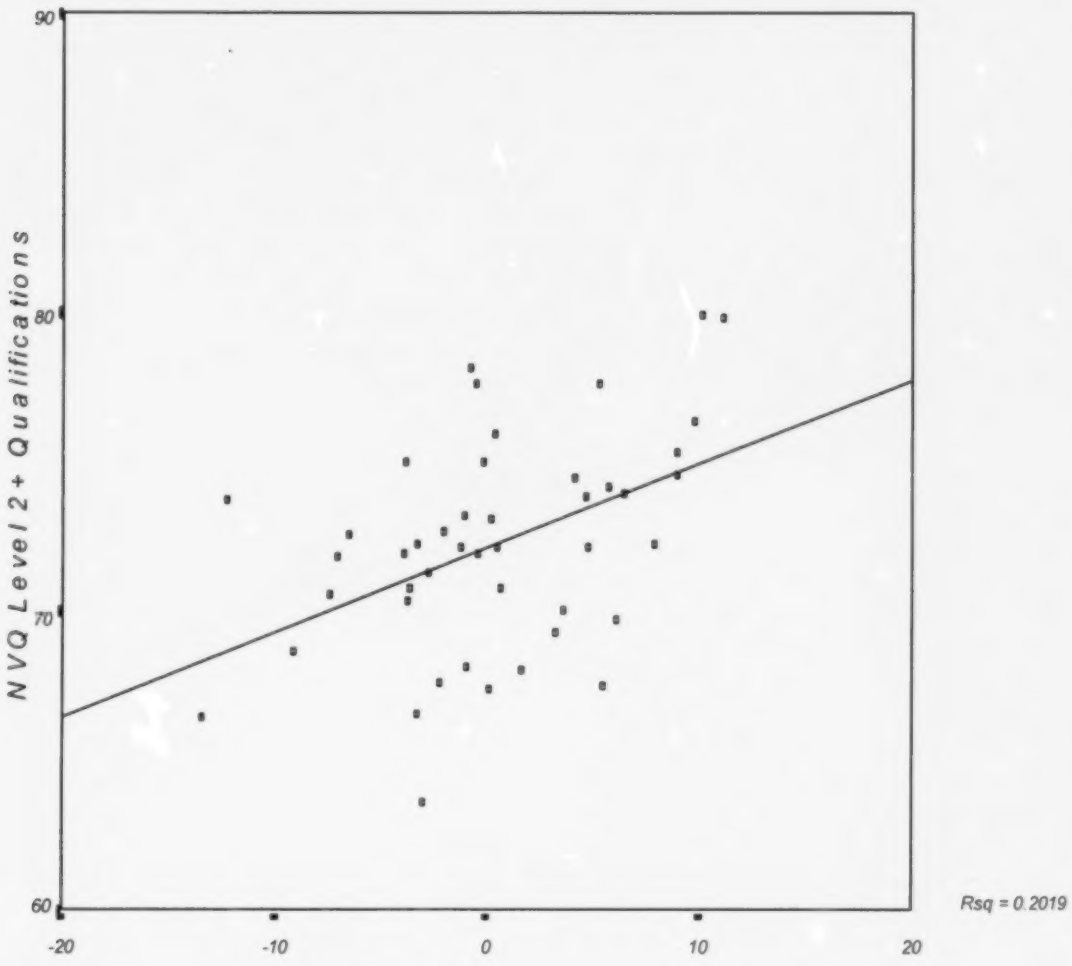
5.1 Skills and Jobs

We examine the relationship between skills levels and jobs growth using 4 indicators of local skill levels: the % of the workforce without qualifications; the % qualified to NVQ2 and above; the % qualified NVQ3 and above; and the % qualified to NVQ4 and above. Our measure of employment growth is, in each case, the growth in full time employment between 1991-1996.

The differences in the rate of jobs growth are in themselves substantial; varying from a high of 10-11% growth in Buckinghamshire and Surrey to a low of 12-13% decline in Merseyside and Cumbria. On all 4 indicators there is a positive correlation between skill levels and jobs growth, with low skill areas tending to experience weak or negative jobs growth and high skill areas tending to experience the most rapid jobs growth. The measure of skill levels which provides the closest relationship with employment performance is the percentage of the workforce qualified to NVQ2 or

above which has a correlation coefficient of .45, which is significant at the 0.01% level. The R^2 = .2, a relationship which is presented in Figure 7.

Figure 7 Level 2 Qualifications by % Change in Full-Time Employment 1991-1996

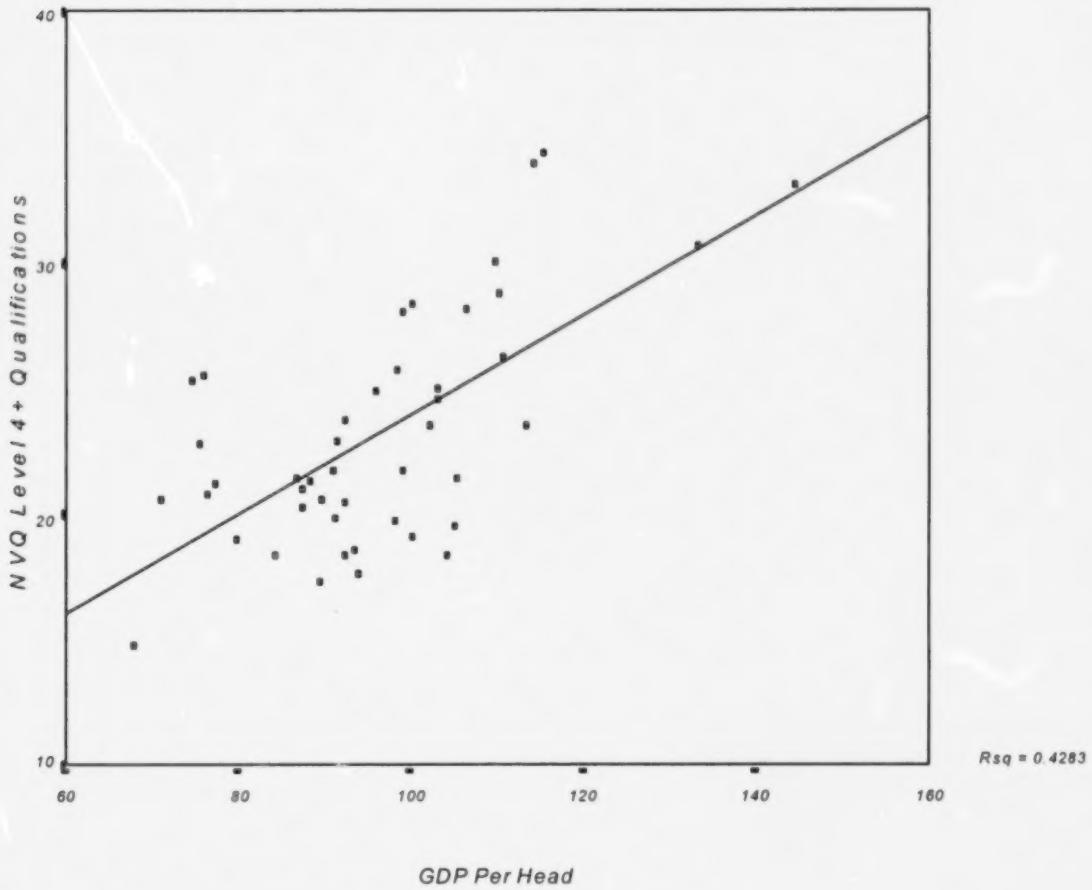


5.2 Skills and Competitiveness

We also examine the relationship between skills levels and competitiveness using the same 4 indicators of local skill levels in the previous section and using GDP per head (in 1996), as a measure of the competitive strength of the locality. Variations in GDP per head across England are in themselves substantial, varying from 144% of the UK average in London and 133% in Berkshire, to 71% of the UK level in Cornwall and 75% in Merseyside.

In the cases of all 4 indicators there is a positive correlation between areas of competitive strength and areas with high skill levels and, conversely, between areas of competitive weakness and areas with relatively low skill levels. The measure of skill levels which provides the closest association with our measure of competitiveness is the proportion of the workforce qualified to NVQ 4 or above which has a correlation coefficient of .65. These results are set out in Figure 8 below. The $R^2 = .43$.

Figure 8 Level 4 (or higher) Qualifications by GDP per head (1996)

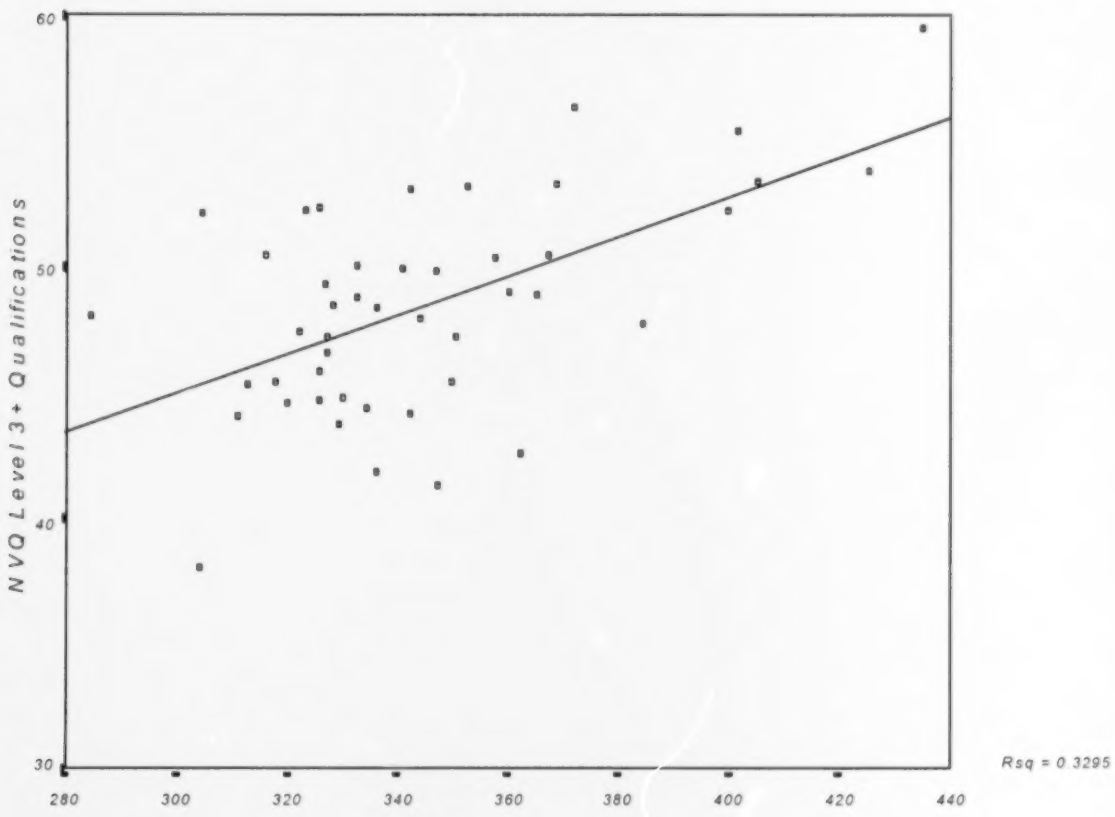


5.3 Skills and Living Standards

We also examine the relationship between skill levels and living standards using, again, the same 4 indicators of skill levels. Our measure of 'living standards' of the local population is gross weekly full-time earnings in 1997. The variations in average earnings across localities are, again, substantial, ranging from £435 per week in Surrey and £425 per week in Berkshire, down to £284 per week in Cornwall. Again, in the cases of all 4 indicators, there is a positive association between skill levels and average earnings, with particularly strong relationships between the proportion of workforce qualified to NVQ 3 and NVQ4 on the one hand, and earnings

on the other. Figure 9 sets out the relationship in respect of the proportion qualified to NVQ3, where the correlation coefficient is .55 and is statistically significant at the 0.01% level. The R^2 =.33.

Figure 9 Level 3 Qualifications by Average Gross Weekly Earnings



NES97

5.4 Skills and Deprivation

The unambiguous and significant relationships set out above between skill levels and a range of indicators of local economic performance, imply a likely connection between a locality's skill levels and its likelihood of being 'deprived'. We can examine this relationship at the detailed level of over 330 local authority districts in England, using the Department of Environment, Transport and the Regions Index of Deprivation for 1998 and, as measures of workforce skills, the proportion of the local workforce who have no qualifications and the proportion who have low, or very low, levels of numeracy.

The index of deprivation takes a value varying from zero (low levels of deprivation) to 40, the highest level of deprivation in England. Nearly 50 local authority districts have a recorded value of zero, whilst a value of 24, or more, places the area in the

10% of most deprived local authority districts in England. These latter include: Liverpool (40), Manchester (36), Birmingham (35), several London Boroughs (for example, Southwark, Lambeth and Haringey), Sunderland (27) and Bradford (26).

Figure 10 **% workforce with no qualifications by index of deprivation**

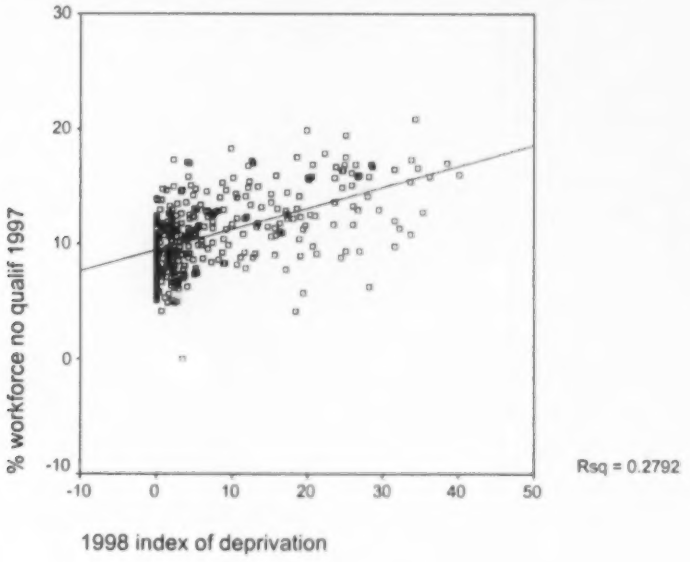
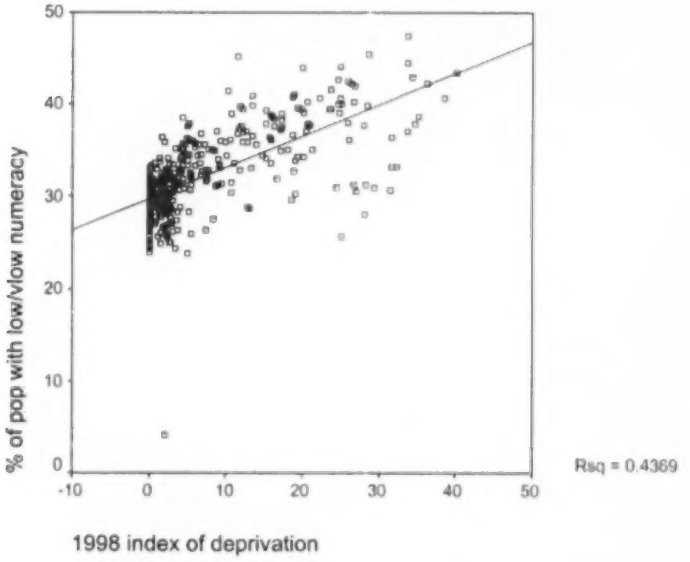


Figure 11 **% of population with vlow/low numeracy by index of Deprivation**



The correlation between workforce skills as measured by the proportion without qualifications and deprivation is statistically significant at the 0.01% level (the correlation coefficient is .53) as is the relationship between workforce skills, as measured by levels of numeracy, and deprivation (the correlation coefficient is .66). Figures 10 and 11 demonstrate the relation, showing the relevant regression line and the R^2.

We can reasonably conclude from this paper so far that:

- There are substantial variations in skill levels between localities
- Skill levels are likely to be very important for localities
- The substantial variations are likely to be systematic across skill levels
- There are substantial variations in economic performance between localities
- The substantial variations in skill levels and economic performance are closely related

We have utilised a range of measures of skill levels as well as a range of measures of economic performance. In every case the relationship between skills and economic performance is positive and statistically significant. Clearly, spatial skill variations matter a great deal.

6. The Implications of Spatial Skills Variations

In this section we briefly outline the implications of our findings for policy and future research before finally summarising our conclusions.

We have seen that there exist substantial variations in skills levels across localities in England. The very existence of these differentials has profound implications for policy. First, such strong variations demonstrate profound spatial inequalities in skill acquisition and skill levels. Such inequalities restrict the life opportunities for many individuals and the scope for competitive advantage for many companies. Second, these strong variations hinder the prospects for rapid and sustained progress on skills at the national level. Third, whilst there remains a debate about the extent to which the scope for skills acquisition is related to 'poverty', we have sought to consider another aspect of the relation – the way in which low skill levels are likely to sustain a locality's weak economic performance and thus the opportunities for its citizens.

We have also see that the spatial skill variations are strongly related to a wide range of indicators of local economic performance. There are clearly enormous economic costs associated with being a low skill locality and very considerable benefits associated with being a high skill locality. Deprived localities are very likely to be low skill localities. Furthermore, national economic performance – in terms of jobs, in terms of competitiveness and in terms of living standards – is being held back by the weak skill position of many localities.

A further implication of the existence and importance of substantial spatial skill variations is the need for public policy to be sensitive to such differences and to target action on specific localities, in order to reduce spatial inequalities, improve local conditions and performance and to enhance national performance.

It will then be clearly necessary to identify those localities of greatest 'need' and, in order to target these areas for actions to improve their performance; resources will need to be deployed in accordance with these needs. As with regional policy and the identification of assisted areas DTI 1999), area designation using objective criteria may be valuable in order to identify those localities which can be granted 'skills aid'. The identification of Objective 1 and 2 geographical areas by the European Commission in co-operation with the UK government, in a similar manner seeks to identify areas suffering from long term underdevelopment or disadvantage so as to identify those areas which will be eligible for certain forms of public intervention and resource. The Single Regeneration Budget (SRB) Challenge programme led by the Department of Environment, Transport and the Regions, now focuses 80% of its resource on a relatively small number of areas which exhibit high levels of deprivation as evidenced in the Index of Local Deprivation.

It will, in any case, be necessary to establish clear baselines for skills levels across the localities, if not for resource allocation purposes, then to monitor change, track progress towards targets and 'benchmark' localities against each other.

It is likely that actions to improve local skills performance will contain a strong 'local' component in terms of policy design and/or implementation. There is strong and growing recognition of the importance of the 'localisation of policy' (OECD 1998b, 1999a and b, Campbell 1999b). The U.K. is also often seen to be at the 'leading edge' of area based approaches, in part because of the scale of our spatial differentiation in many aspects of the pattern of economic development (Smith 1999) and because of a realised need to make closer links between area based approaches and national programmes. Smith (1999) reviews the considerations affecting the selection and scale of the appropriate 'target areas'.

There are a range of reasons, beyond the actual existence of concrete differences in skill levels and the need to ensure that these skill needs are effectively met, for the adoption of 'localised' approach. Local information and intelligence will be vital in securing policies, programmes and projects that are appropriate to local needs. Policy design at a local level can be more refined, focused, targetted and flexible. The involvement of the local partners (employers, workers, agencies, intermediaries) can be powerful in identifying local needs, adapting policy and project design and, especially, securing ownership of, and legitimacy for, the necessary actions. There are also implementation benefits associated with localisation. It brings the relevant agencies 'closer' to the target communities, it increases information exchange and dialogue, it reduces fragmentation and enhances co-ordination. Networking, the development of trust relations and even partnerships to engage in 'joined up' action, are also easier to develop at a local level.

Furthermore the evolving institutional architecture in England is consistent with such an approach. The establishment of local lifelong learning partnerships in January 1999, with a remit to develop a strategic approach to enhancing post 16 education and training, is important in this regard. They are to be 'placed at the heart of the new arrangements' which 'must be driven from the bottom up' (DfEE 1999). Their local learning plans are to be in place in the Autumn of 1999, documents which are designed to propose actions to meet locally determined skills targets for each of the 4 (post 16) individual based, National Learning Targets, as well as, potentially, the widening participation target.

In 2001 around 50 new Skills and Learning Councils will be established on a local basis throughout England, bringing together the funding and planning of all post 16 (outside Higher Education) provision of education and training in the area; ensuring that decisions 'must respond to the skills and learning needs of local labour markets and communities; and setting out a targeted action plan (DfEE 1999).

In April 1999 Regional Development Agencies were established in 8 regions with, inter alia, a responsibility to produce a regional skills strategy and skills action plan. The work of the Skills and Learning Councils will 'draw on and in turn support' this strategy and action plan.

One important issue, however, that needs to be resolved, for measurement, policy and implementation purposes, is the 'appropriate' level of area identification: what is the most desirable geographical scale? The evolving institutional architecture, is at different 'scales' – the regional skills action plans of the RDAs; the learning plans of the LLPs; the educational development plans (pre 16) of the local education

authorities; the New Deal delivery units; and the planning and funding of the SLCs. Furthermore much action to enhance local skills levels also takes place within objective 1 and 2 European programmes (which have particular and, in some cases, non coterminous boundaries); under SRB programmes (which are often in parts of local authority districts); and under the various 'zones', for example education and employment, which may be smaller than, identical to, or larger than a local authority district.

The availability of statistical information on various skills indicators is also available at different levels (some at county, some at local education authority and some at local authority district). These 2 factors, the institutional architecture and information availability, will, in practical terms, structure the spatial 'level' of intervention to tackle spatial skill variations. However, the forthcoming report from the Social Exclusion Unit on neighbourhood renewal will focus on the need to target action, as with New Deal for Communities, on smaller geographical areas.

We can also identify three implications of our findings for a future research agenda. First, it would be valuable to examine how far the patterns of skill variations are changing over time. Are skill poor areas improving or deteriorating their relative position overtime? Associated with this, could be an examination of the extent to which the linkage between skills and various aspects of economic performance was strengthening or weakening over time. Second, it would be useful to examine spatial variations in other aspects of skill formation, in particular, levels of employer training, and skill imbalance, for example skill shortages, skill gaps and skill needs. Third, it is important to begin to understand the causes of the extensive skill variations that have been uncovered and to assess the extent to which they reflect an equilibrating or disequilibrating process in relation to supply and demand conditions in the learning and labour markets.

This paper has sought to examine the extent, nature and implications of spatial variations in skill levels across England. Its main conclusions are that:

- Spatial skill variations are substantial across all levels of qualification both for young people and across the workforce as a whole.
- Spatial skill variations are systematic in the sense that low skill localities are generally low skill at age 11, at age 16, and in the workforce as a whole.
- Spatial skill variations are closely connected to variations in local economic performance in terms of jobs, competitiveness, living standards and deprivation.
- The existence of spatial skill variations and their linkage to local economic performance has substantial implications for policy development.

REFERENCES:

Ashton D & Felstead A (1998), *Organisational Characteristics and Skill Formation in Britain: Is There a Link?* Working Paper No 22 Leicester, Centre for Labour Market Studies, University of Leicester.

Barrett A et al (1998), *Exploring the Returns to Continuing Vocational Training in Enterprises.* Thessaloniki, CEDEFOP.

Barro R (1991), *Economic Growth in a Cross Section of Countries*, Quarterly Journal of Economics, May, pp 407-443.

Basic Skills Agency (1998), *Adults' Basic Skills: Benchmark Information on Scale of Need in Different Areas in England* (CD Rom), London, Basic Skills Agency.

Bradley S and Taylor J (1996), *Human Capital Formation and Local Economic Performance*, Regional Studies, Vol 30 (1) pp1-14.

Campbell M (1999a), *Learning Pays and Learning Works*, Sheffield, NACETT.

Campbell M (1999b), *Local Partnerships and Welfare to Work in The Local Dimension of Welfare to Work*, Paris, OECD.

Coyle D (1999), *The Weightless Economy*, Manchester, Capstone.

DfEE (1999), *Learning to Succeed*, London, TSO.

DTI (1999), *The Government's Proposals for New Assisted Areas*, URN99/963, London, DTI.

Englander S and Gurney A (1999), *Productivity Growth: Medium Term Trends*, Economic Studies No 22, Paris, OECD.

Felstead A et al (1999), *Skill Trends in Britain in Coffield F* (ed) Research and Policy Implications of a Learning Society, Bristol, Policy Press.

Green F (1997), *Review of Information on the Benefits of Training for Employers, Research Report No 7*, Sheffield DfEE.

Green F (1998), *The Value of Skills, Studies in Economics, 98/19*, Canterbury, Department of Economics, University of Kent.

Nickell S and Layard R (1998) Labour Market Institutions and Economic Performance Discussion Paper No 407, London, LSE Centre for Economic Performance.

OECD (1998a), *Human Capital Investment: An International Comparison*, Paris, OECD, Centre for Educational Research and Innovation.

OECD (1999a) The Local Dimension of Welfare to Work, Paris, OECD.

OECD (1998b), *Local Management for Effective Employment Policies*, Paris, OECD.

OECD (1999a), *Decentralising Employment Policy*, Paris, OECD.

Payne J (1997), *Routes at 16: Trends and Choices in the 90s*, DfEE Research Report RR55, Sheffield, DfEE.

Schuller T and Field J (1998) Social Capital, Human Capital and the Learning Society, International Journal of Lifelong Education Vol 17 No. 4 Pages 226-35.

Smith G R (1999), *Area Based Initiatives: The Rationale for, and options for Area Targetting*, CASE paper No 25, London, LSE.

Social Exclusion Unit (1999), *Bridging the Gap: New Opportunities for 16-18 year olds not in education, employment or training*, Cm 4405, London, TSO.

Sturm R (1993), *How Do Education and Training Affect a Country's Economic Performance?* Santa Monica, Rand Institute of Education and Training.

More Information

More copies of this report are available free of charge (quoting the appropriate **SKT** reference) from:

Prolog
PO Box 5050
Sudbury
Suffolk
CO10 6YJ
Tel 0845 60 222 60
Fax 0845 60 333 60

This report and the others in the series are also available on the world wide web at:

www.dfee.gov.uk/skillsforce

Reports **SKT 17 to 24** are the latest to be published. Reports **SKT6 to 16** were released in September 1999 A complete list of all the reports follows.

SKT 6	**Anticipating Future Skill Needs: Can it be Done? Does it Need to be Done?**
SKT 7	**The Dynamics of Decision Making in the Sphere of Skills' Formation**
SKT 8	**Management Skills**
SKT 9	**Intermediate Level Skills - How are they changing?**
SKT10	**Jungle Trekking: Vocational Courses and Qualifications for Young People**
SKT11	**The Leisure Sector**
SKT12	**Engineering Skills Formation in Britain: Cyclical and Structural Issues**
SKT13	**The Market Value of Generic Skills**
SKT14	**Employment Prospects and Skill Needs in the Banking, Finance and Insurance Sector**
SKT15	**New Technology Industries**
SKT16	**Funding Systems and their Impact on Skills**
SKT17	**Skills Requirements in the Creative Industries**
SKT18	**Skills Issues in Small and Medium Sized Enterprises**
SKT19	**Spatial Skill Variations: their extent and implications**
SKT20	**Employers' Attitude to Training**
SKT21	**Skills Issues in Other Business Services - Professional Services**
SKT22	**Science Skills Issues**
SKT23	**Empirical Evidence of Management Skills in the UK**
SKT24	**Monitoring and measuring occupational change: the development of SOC2000**

If you would like more information on the work of the Skills Task Force, or to comment on their proposals, please write to:

Nick Parry
Skills Task Force Secretariat
Room W1120
Moorfoot
Sheffield
S1 4PQ
Tel 0114 359 4385
Fax 0114 259 3005
or
e-mail skills.taskforce@dfee.gov.uk

DfEE

Department for
Education and Employment

BEST COPY AVAILABLE